

**METHODS AND DEVICES FOR MEASURING A SURFACE PROFILE OF
AN OPTICAL ELEMENT**

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Abstract of the Disclosure

Methods are disclosed for measuring the surface profile of a "test surface" of an object such as an optical element, which can be a lens or reflective element (mirror). The "test surface" can have any of various profiles, including (but not limited to) spherical or aspherical. In a method embodiment, respective phase distributions of interference fringes, produced by interference of a reference light and light reflected from the test surface, and interference of the reference light and a respective light reflected from at a reference standard and/or a verification standard. A profile difference is computed from the respective phase distributions of interference fringes produced with respect to the test surface and the reference standard and/or verification standard. The profile difference is corrected, wherein the corrected profile difference is expressed as respective rotation-symmetry-error and rotation-asymmetry-error components, and the rotation-symmetry-error component is expressed as respective high-order and low-order components. The high-order component is computed by extraction from a difference between two difference phase distributions of interference fringes.